CLAIM AMENDMENTS

1. (Previously Presented) In the manufacture of a magnetic recording medium, a method of varying coercivity comprising the steps of:

a) providing a substrate for supporting magnetic layers;

b) sputtering on the substrate an underlayer having a lattice structure for matching with a magnetic layer lattice structure;

c) sputtering a first magnetic layer on the underlayer, the first magnetic layer having a first alloy composition and a first coercivity;

d) sputtering a second magnetic layer on and in contact with the first magnetic layer, the second magnetic layer having a second alloy composition which differs from the first alloy composition and a second coercivity which differs from the first coercivity, whereby a coercivity of the two magnetic layers is different than the first and second coercivities and is determined by the relative thicknesses of the two magnetic layers; and

e) sputtering a third magnetic layer on the second magnetic layer.

2. (Original) The method as defined by claim 1 wherein steps c) and d) form magnetic layers each having a thickness in the range of 2 nm – 50 nm.

3. (Original) The method as defined by claim 2 wherein each of the two magnetic layers comprise a cobalt alloy with at least one of chromium, platinum, tantalum, boron, niobium, molybdenum, nickel, tungsten, carbon, aluminum, iron, and manganese.

4. (Currently Amended) The method as defined by claim 3 wherein step c) forms a first magnetic layer having an alloy composition of Co-20Cr-10Pt-8B, and step d) forms a second magnetic layer having an alloy composition of Co-22Cr-10Pt-6B.

5. (Currently Amended) The method as defined by claim 3 wherein step c) forms a first magnetic layer having an alloy composition of Co-20Cr-10Pt-8B, and step d) forms a second magnetic layer having an alloy composition of Co-26Cr-10Pt-6B.

6. (Currently Amended) The method as defined by claim 3 wherein step c) forms a first magnetic layer having an alloy composition of Co-20Cr-10Pt-8B, and step d) forms a second magnetic layer having an alloy composition of Co-20Cr-8Pt-4Ta.

7. (Currently Amended) The method as defined by claim 3 wherein step c) forms a first magnetic layer having an alloy composition of Co-20Cr-8Pt-4Ta, and step d) forms a second magnetic layer having an alloy having a composition of Co-18Cr-6Pt-3Ta.

8. (Previously Presented) The method as defined by claim 3 wherein step b) includes providing an underlayer that is chromium or a chrome alloy.

9. (Previously Presented) The method as defined by claim 8 wherein step a) includes providing a substrate that is nickel phosphorus or ceramic glass.

10. (Previously Presented) The method as defined by claim 1 wherein step a) includes providing a substrate that is nickel phosphorus or ceramic glass, and step b) includes providing an underlayer that is chromium or a chrome alloy.

11. (Currently Amended) A magnetic recording medium, comprising:

a substrate;

an underlayer supported by the substrate;

a first magnetic layer on the underlayer, said first magnetic layer having a first alloy composition that includes Pt and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, the second magnetic layer having a second alloy composition that includes Pt which differs from the first alloy composition and a second coercivity which differs from the first coercivity, ~~the second alloy composition not containing more boron by atomic percentage than the first alloy composition,~~ whereby a coercivity of the two magnetic layers is different than the first and second coercivities and is determined by a relative thickness of the first magnetic layer to the thickness of the first and second~~two~~ magnetic layers, and varying a thickness fraction of the

thickness of the first magnetic layer to the thickness of the first and second magnetic layers changes the coercivity of the medium by at least 10 percent and changes the remanence of the medium by at most 5 percent.

12. (Original) The magnetic recording medium as defined by claim 11 wherein the thickness of each magnetic layer is between 2 nm and 50 nm.

13. (Original) The magnetic recording medium as defined by claim 11 wherein each of the two magnetic layers comprise an alloy of cobalt with at least one of chromium, platinum, tantalum, boron, niobium, molybdenum, nickel, tungsten, carbon, aluminum, iron, and manganese.

14. (Original) The magnetic recording medium as defined by claim 13 wherein the first magnetic layer comprises an alloy having a composition of Co-20Cr-10Pt-8B and the second magnetic layer comprises an alloy having a composition of Co-22Cr-10Pt-6B.

15. (Original) The magnetic recording medium as defined by claim 13 wherein the first magnetic layer comprises an alloy having a composition of Co-20Cr-10Pt-8B, and the second magnetic layer comprises an alloy having a composition of Co-26Cr-10Pt-6B.

16. (Previously Presented) The magnetic recording medium as defined by claim 13 wherein the first magnetic layer comprises an alloy having a composition of Co-20Cr-10Pt-8B, and the second magnetic layer comprises an alloy having a composition of Co-20Cr-8Pt-4Ta.

17. (Previously Presented) The magnetic recording medium as defined by claim 13 wherein the first magnetic layer comprises an alloy having a composition of Co-20Cr-8Pt-4Ta, and the second magnetic layer comprises an alloy having a composition of Co-18Cr-6Pt-3Ta.

18. (Previously Presented) The magnetic recording medium as defined by claim 11 wherein the substrate is nickel phosphorus or ceramic glass, and the underlayer is chromium or chrome alloy.

19. (Previously Presented) The magnetic recording medium as defined by claim 18 and further including a seedlayer between the underlayer and the substrate, a carbon overcoat layer over the second magnetic layer, and a lubricant layer on the carbon overcoat layer.

20. (Previously Presented) A method for establishing a coercivity of magnetic recording material on a substrate comprising the steps of providing a substrate and first and second cobalt based alloy magnetic layers sputtered in sequence on the substrate and in contact with one another, wherein the first magnetic layer has a first quaternary alloy composition and a first coercivity, the second magnetic layer has a second quaternary alloy composition and a second coercivity, ~~the first quaternary alloy composition contains as much or more boron by atomic percentage than the second quaternary alloy composition,~~ with the relative thicknesses of the first and second~~two~~ magnetic layers determining the coercivity of the material, ~~and~~ the coercivity of the material being different than the first and second coercivities, and varying a thickness fraction of the thickness of the first magnetic layer to the thickness of the first and second magnetic layers changes the coercivity of the material by at least 10 percent and changes the remanence of the material by at most 5 percent.

21. (Previously Presented) A magnetic recording medium, comprising:

a substrate;

a first magnetic layer over the substrate, wherein the first magnetic layer has a first alloy composition and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, wherein the second magnetic layer has a second alloy composition and a second coercivity, the first and second alloy compositions are different, the first and second coercivities are different, a coercivity of the medium is different than the first and second coercivities, and varying a thickness fraction of the thickness of the first magnetic layer to the thickness of the first and second magnetic layers changes the coercivity of the medium a first percentage, changes the remanence of the medium a second percentage, and the first percentage is at least twice the second percentage.

22. (Previously Presented) The magnetic recording medium as defined by claim 21 wherein the first and second alloy compositions are quaternary alloy compositions.

23. (Previously Presented) The magnetic recording medium as defined by claim 22 wherein the first and second alloy compositions have the same four elements.

24. (Previously Presented) The magnetic recording medium as defined by claim 23 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-22Cr-10Pt-6B.

25. (Previously Presented) The magnetic recording medium as defined by claim 23 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-26Cr-10Pt-6B.

26. (Previously Presented) The magnetic recording medium as defined by claim 23 wherein the first alloy composition is Co-20Cr-8Pt-4Ta and the second alloy composition is Co-18Cr-6Pt-3Ta.

27. (Previously Presented) The magnetic recording medium as defined by claim 22 wherein the first and second alloy compositions have the same three elements and a different fourth element.

28. (Previously Presented) The magnetic recording medium as defined by claim 27 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-20Cr-8Pt-4Ta.

29. (Currently Amended) The magnetic recording medium as defined by claim 21 wherein the first and second magnetic layers are deposited under the same deposition conditions~~second alloy composition excludes boron~~.

30. (Previously Presented) The magnetic recording medium as defined by claim 21 wherein the coercivity of the medium is determined by the thickness fraction $t_{Mag1}/(t_{Mag1} + t_{Mag2})$ where t_{Mag1} is the thickness of the first magnetic layer and t_{Mag2} is the thickness of the second magnetic layer.

31. (Currently Amended) A magnetic recording medium, comprising:

a substrate;

a first magnetic layer over the substrate, wherein the first magnetic layer has a first alloy composition and a first coercivity and is sputter deposited over the substrate under a first deposition condition that includes a temperature and bias of the substrate; and

a second magnetic layer on and in contact with the first magnetic layer, wherein the second magnetic layer has a second alloy composition and a second coercivity and is sputter deposited on the first magnetic layer under a second deposition condition that includes a temperature and bias of the substrate, the first and second alloy compositions are different compositions that contain Co and Pt, ~~the second alloy composition does not contain more boron by atomic percentage than the first alloy composition,~~ the first and second coercivities are different, the first and second deposition conditions are the same, ~~and~~ a coercivity of the medium is different than the first and second coercivities, and varying a thickness fraction of the thickness of the first magnetic layer to the thickness of the first and second magnetic layers changes the coercivity of the medium a first percentage, changes the remanence of the medium a second percentage, and the first percentage is at least twice the second percentage.

32. (Previously Presented) The magnetic recording medium as defined by claim 31 wherein the first and second alloy compositions are quaternary alloy compositions.

33. (Previously Presented) The magnetic recording medium as defined by claim 32 wherein the first and second alloy compositions have the same four elements.

34. (Previously Presented) The magnetic recording medium as defined by claim 33 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-22Cr-10Pt-6B.

35. (Previously Presented) The magnetic recording medium as defined by claim 33 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-26Cr-10Pt-6B.

36. (Previously Presented) The magnetic recording medium as defined by claim 33 wherein the first alloy composition is Co-20Cr-8Pt-4Ta and the second alloy composition is Co-18Cr-6Pt-3Ta.

37. (Previously Presented) The magnetic recording medium as defined by claim 32 wherein the first and second alloy compositions have the same three elements and a different fourth element.

38. (Previously Presented) The magnetic recording medium as defined by claim 37 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-20Cr-8Pt-4Ta.

39. (Currently Amended) The magnetic recording medium as defined by claim 31 wherein varying the ~~a~~ thickness fraction ~~of the thickness of the first magnetic layer to the thickness of the first and second magnetic layers~~ changes the coercivity of the medium by at least 10 percent and~~a first percentage,~~ changes the remanence of the medium by at most 5 percent~~a second percentage, and the first percentage is at least twice the second percentage~~.

40. (Previously Presented) The magnetic recording medium as defined by claim 31 wherein the coercivity of the medium is determined by the thickness fraction $t_{Mag1}/(t_{Mag1} + t_{Mag2})$ where t_{Mag1} is the thickness of the first magnetic layer and t_{Mag2} is the thickness of the second magnetic layer.

41. (Currently Amended) A magnetic recording medium, comprising:

a substrate;

a first magnetic layer over the substrate, wherein the first magnetic layer has a first alloy composition and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, wherein the second magnetic layer has a second alloy composition and a second coercivity, the first and second alloy compositions are different quaternary alloy compositions, ~~the second alloy composition does not contain more boron by atomic percentage than the first alloy composition,~~ the first and second coercivities are different, ~~and~~ a coercivity of the medium is different than the first and second coercivities, and varying a thickness fraction of the thickness of the first magnetic layer to the thickness of the first and second magnetic layers changes the coercivity of the medium a first percentage, changes the remanence of the medium a second percentage, and the first percentage is at least twice the second percentage.

42. (Previously Presented) The magnetic recording medium as defined by claim 41 wherein the first and second alloy compositions include Co, Cr and Pt.

43. (Previously Presented) The magnetic recording medium as defined by claim 42 wherein the first and second alloy compositions have the same four elements.

44. (Previously Presented) The magnetic recording medium as defined by claim 43 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-22Cr-10Pt-6B.

45. (Previously Presented) The magnetic recording medium as defined by claim 43 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-26Cr-10Pt-6B.

46. (Previously Presented) The magnetic recording medium as defined by claim 43 wherein the first alloy composition is Co-20Cr-8Pt-4Ta and the second alloy composition is Co-18Cr-6Pt-3Ta.

47. (Previously Presented) The magnetic recording medium as defined by claim 42 wherein the first and second alloy compositions have the same three elements and a different fourth element.

48. (Previously Presented) The magnetic recording medium as defined by claim 47 wherein the first alloy composition is Co-20Cr-10Pt-8B and the second alloy composition is Co-20Cr-8Pt-4Ta.

49. (Currently Amended) The magnetic recording medium as defined by claim 41 wherein the first and second magnetic layers are deposited under the same deposition conditions~~second alloy composition excludes boron~~.

50. (Previously Presented) The magnetic recording medium as defined by claim 41 wherein the coercivity of the medium is determined by the thickness fraction $t_{Mag1}/(t_{Mag1} + t_{Mag2})$ where t_{Mag1} is the thickness of the first magnetic layer and t_{Mag2} is the thickness of the second magnetic layer.

51. (Previously Presented) A magnetic recording medium, comprising:

a substrate;

an underlayer supported by the substrate;

a first magnetic layer on the underlayer, said first magnetic layer having a first alloy composition of Co-20Cr-10Pt-8B and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, the second magnetic layer having a second alloy composition of Co-22Cr-10Pt-6B and a second coercivity which differs from the first coercivity, whereby a coercivity of the two magnetic layers is

different than the first and second coercivities and is determined by a relative thickness of the first magnetic layer to the thickness of the two magnetic layers.

52. (Previously Presented) A magnetic recording medium, comprising:

a substrate;

an underlayer supported by the substrate;

a first magnetic layer on the underlayer, said first magnetic layer having a first alloy composition of Co-20Cr-10Pt-8B and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, the second magnetic layer having a second alloy composition of Co-26Cr-10Pt-6B and a second coercivity which differs from the first coercivity, whereby a coercivity of the two magnetic layers is different than the first and second coercivities and is determined by a relative thickness of the first magnetic layer to the thickness of the two magnetic layers.

53. (Previously Presented) A magnetic recording medium, comprising:

a substrate;

an underlayer supported by the substrate;

a first magnetic layer on the underlayer, said first magnetic layer having a first alloy composition of Co-20Cr-10Pt-8B and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, the second magnetic layer having a second alloy composition of Co-20Cr-8Pt-4Ta and a second coercivity which differs from the first coercivity, whereby a coercivity of the two magnetic layers is different than the first and second coercivities and is determined by a relative thickness of the first magnetic layer to the thickness of the two magnetic layers.

54. (Previously Presented) A magnetic recording medium, comprising:

a substrate;

an underlayer supported by the substrate;

a first magnetic layer on the underlayer, said first magnetic layer having a first alloy composition of Co-20Cr-8Pt-4Ta and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, the second magnetic layer having a second alloy composition of Co-18Cr-6Pt-3Ta and a second coercivity which differs from the first coercivity, whereby a coercivity of the two magnetic layers is different than the first and second coercivities and is determined by a relative thickness of the first magnetic layer to the thickness of the two magnetic layers.

55. (Previously Presented) A magnetic recording medium, comprising:

a substrate;

an underlayer supported by the substrate;

a first magnetic layer on the underlayer, said first magnetic layer having a first quaternary alloy composition that includes Co, Cr and Pt and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, the second magnetic layer having a second quaternary alloy composition that includes Co, Cr, Pt and Ta which differs from the first alloy composition a second coercivity which differs from the first coercivity, whereby a coercivity of the two magnetic layers is different than the first and second coercivities and is determined by a relative thickness of the first magnetic layer to the thickness of the two magnetic layers.

56. (Previously Presented) A magnetic recording medium, comprising:

a substrate;

an underlayer supported by the substrate;

a first magnetic layer on the underlayer, said first magnetic layer having a first alloy composition and a first coercivity; and

a second magnetic layer on and in contact with the first magnetic layer, wherein the second magnetic layer has a second alloy composition and a second coercivity, the first and second alloy compositions are different, the first and second coercivities are different, a coercivity of the medium is different than the first and second coercivities, and varying a thickness fraction of the thickness of the first magnetic layer to the thickness of the first and second magnetic layers changes the coercivity of the medium by at least 10 percent and changes the remanence of the medium by at most 5 percent.

57. (Previously Presented) The magnetic recording medium as defined by claim 56 wherein the first and second alloy compositions include Co and Pt.

58. (Previously Presented) The magnetic recording medium as defined by claim 57 wherein the first and second alloy compositions include Cr.

59. (Previously Presented) The magnetic recording medium as defined by claim 58 wherein the first and second alloy compositions are quaternary alloy compositions.

60. (Previously Presented) The magnetic recording medium as defined by claim 59 wherein the first alloy composition includes B and the second alloy composition includes B or Ta.